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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/032,941

10/31/2001

Harry Hedler

13292-007001 /
2001P15322

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FISH & RICHARDSON PC
225 FRANKLIN ST
BOSTON, MA 02110

EXAMINER

CLARK, SHEILA V

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 08/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
10/032,941

Applicant(s)
Harry et al

Examiner
Sheila V. Clark

Art Unit
2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 30, 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 2, 3, 5, 8, 9, 12, 13, 16, 17, 18, 19, 20, 22 are rejected under 35 U.S.C. 102(a) as being anticipated by Grigg.

Grigg shows in figures 2-6 a semiconductor substrate 10 and a compliant interconnect element 50 formed in a ring disposed on the first surface and having a raised portions shown in figure 5 defining a chamber in the middle portion of said ring whereby said ring is taught to protrude from the surface of the semiconductor substrate (col. 5, lines 59-60).

Said compliant interconnect is taught to be formed of polymer.

A first conducting pad 12 is formed on the substrate and a contact layer 22 is shown disposed on said on the compliant interconnect and in contact with the first conducting pad.

A plurality of pads are shown in figure 6 and pad redistribution structures are shown in figures 7 and 9.

Substrate 30 is taught to be a higher level substrate which are also known as printed circuit substrates whereby a second pad 32 is disposed thereon and in electrical communication with the first conducting pad.

The steps of providing is deemed to be inherently taught by Grigg and use of a transfer substrate is taught in col. 7, lines 5-8.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 6, 7, 10, 11, 14, 15, 21, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grigg .

The features recited in these claims are considered features that are typically utilized in flip chip package assemblies and would therefore be obvious to one having ordinary skill in this art.

The height measurement recited in claims 6 and 7 would have been obviously considered by a workman having ordinary skill in this art in the design and optimization of the device.

Polymer material taught by Grigg would obviously include conventional materials such as silicone.

With regard to claim 10, the background of the device discussed in col. 1, lines 33-35 and col. 5, lines 50-55 obviously include micro electro mechanical systems which can be semiconductor die, chip scale packages, and ball grid arrays as listed.

Encapsulations recited in claims 11 and 23 are typically utilized in chip packages and it would therefore be obvious to one having ordinary skill in this art that encapsulations are utilized in the package of Grigg to protect the device and to enhance thermal conductivity characteristics.

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With regard to claims 14, and 15, the “contact pads” of Grigg are characterized broadly and thereby suggests pads that are conventionally used in this art and typically in the devices recited in col.5, lines 50-55 and therefore may include multilayer metal structures as are typical in this art and whereby said metal may be obviously formed of the conventional thickness recited and be formed at least one of the conventional materials recited in claim 14 which at least one of said materials is utilized for its benefits relative to strength, thermal characteristics or electrical resistance.

Said transfer substrate is taught to utilize an adhesive which may obviously be formed of glass as such is well known in this art and would have been obvious to having ordinary skill in this art.

Claims 1-23 are recited.

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. Applicant is also to note that as discussed in the interview in May 2003, the claims continue to fail to provide structural features with specific characteristics that would distinguish the recited structural features from device structure electrical and mechanical that are well known in this art.

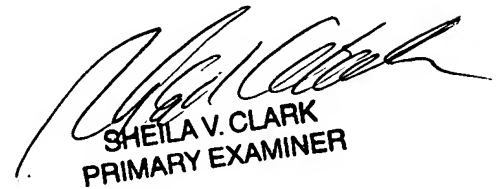
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner S.V. Clark whose telephone number is (703) 308-4924.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee , can be reached on (703) 308-1690. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 or 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

July 27, 2003



SHEILA V. CLARK
PRIMARY EXAMINER